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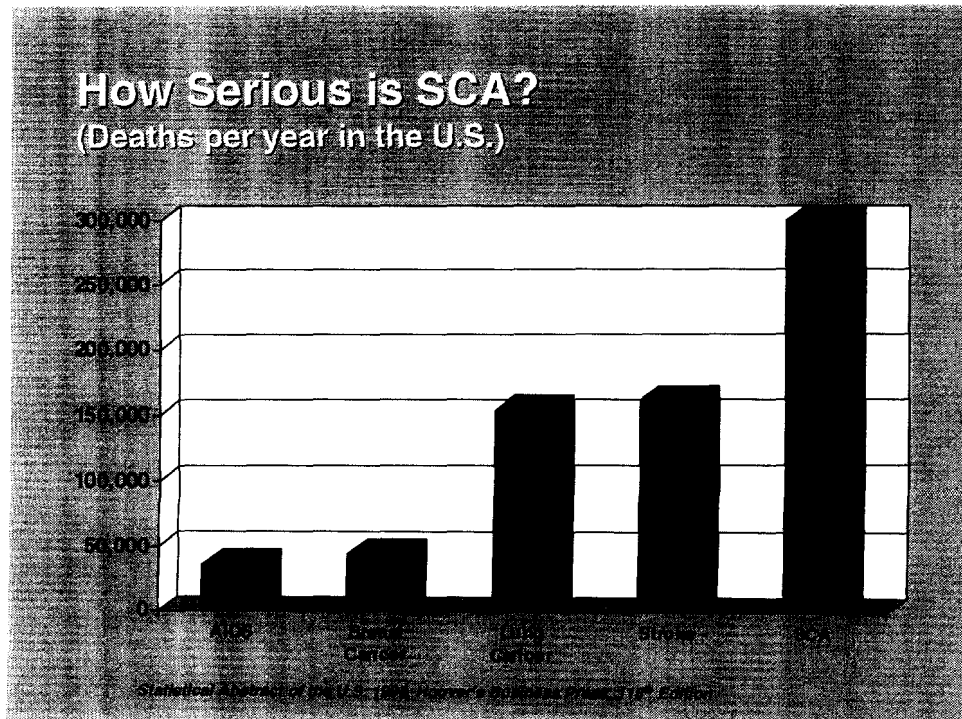
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FCC MAIL ROOMRegarding: FCC Docket 94-102 -- Waiver Request of AT&T

To the FCC:

The waiver request of AT&T Wireless, if it were granted, would have a profound detrimental effect on America's ability to provide emergency medical care. I am greatly concerned about this and request that you deny the application.

Emergency Medical Services (EMS) systems are built on the foundation that prompt response, early treatment, and rapid transportation to a hospital or trauma center are essential to maximizing the likelihood of surviving life-threatening illness or injury. Over the years, improvements in the 9-1-1 process, personnel training, ambulance deployment, and treatments have strengthened America's EMS systems and improved patient outcomes. The cornerstone of America's EMS system is 9-1-1. The system is activated by the prompt recognition of an emergency medical condition, dispatch of appropriate personnel, and providing, when appropriate, medical care instructions over the telephone. However, all of this is threatened by the inability of 9-1-1 dispatchers to rapidly and accurately determine the location of a caller on a wireless phone.

A good example of this is the treatment of Sudden Cardiac Arrest (SCA). SCA kills over 300,000 people in the United States each year. (1)

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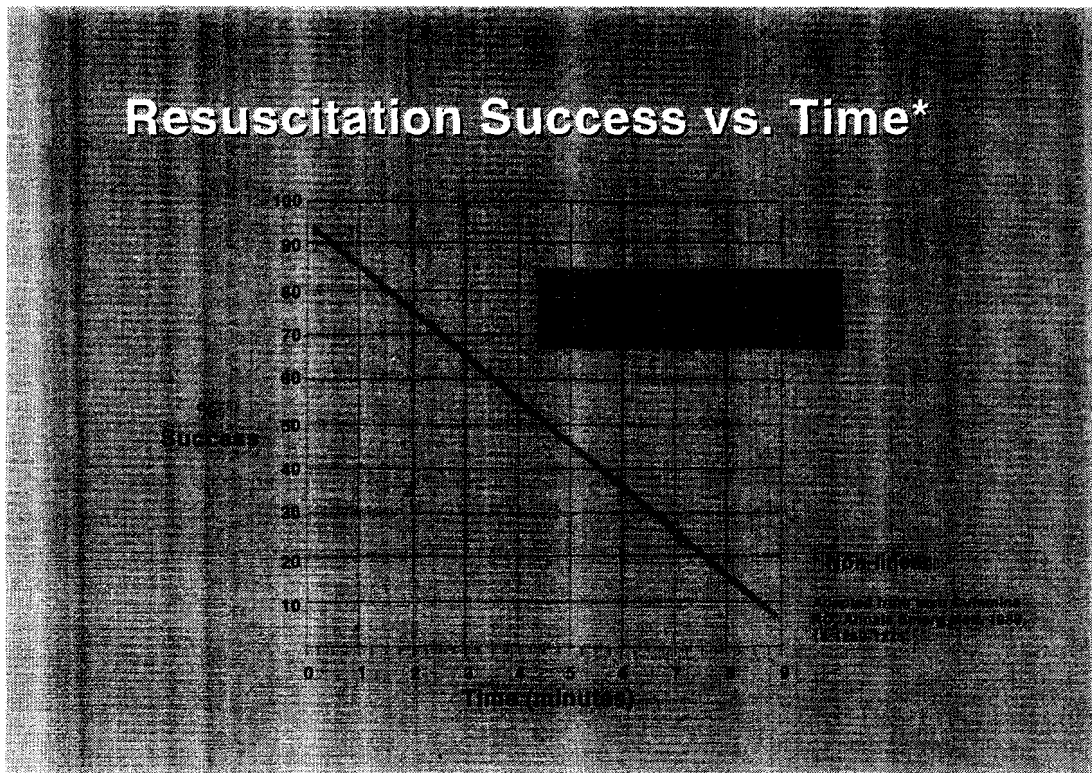
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SCA kills over 300,000 people in the United States each year

There is only one effective treatment for Sudden Cardiac Arrest: defibrillation; the application of an electrical shock to the heart. In order to be effective, defibrillation must occur as quickly as possible after the patient collapses.

It has been clearly shown that survival decreases by 7-10% each minute the patient waits for defibrillation. (2)



Survival decreases by 7-10% each minute patient waits for defibrillation

Valenzuela, et. al. (3) compared the collapse-to-defibrillation interval in 2000 cases of SCA, and found that if cardiopulmonary resuscitation (CPR) is started within 5 minutes of collapse and defibrillation is performed within 10 minutes, the patient has a 37% chance of surviving. However, if neither occurs, the likelihood of survival is virtually zero.

SURVIVAL AFTER CARDIAC ARREST

		COLLAPSE TO DEFIBRILLATION	
		< 10 min	> 10 min
COLLAPSE TO CPR	< 5 min	37	7
	> 5 min	20	0

Valenzuela, et al. *Circulation*, 1997;96:3308-13

**CPR within 5 minutes of collapse and defibrillation within 10 minutes
= 37% chance of surviving. If neither occurs, survival is virtually zero.**

American Heart Association's *Chain of Survival*

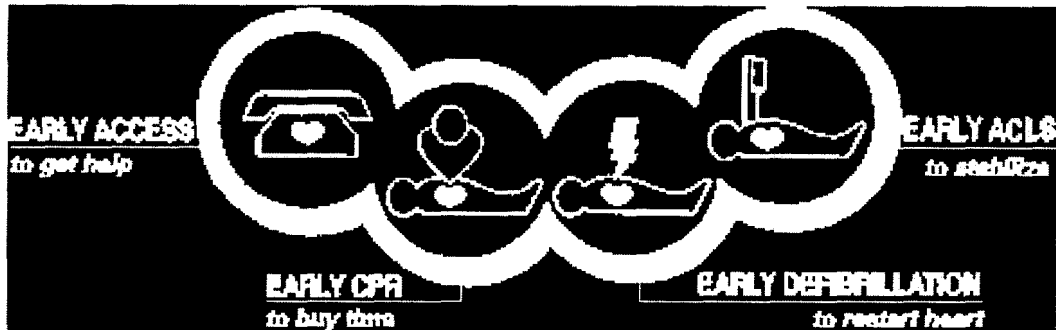
The American Heart Association has developed the concept of the *Chain of Survival* (4). The chain represents the optimum sequence of events that must occur for patients to survive after a sudden cardiac arrest.

Each link in this chain must be in place. The first link, *Early Access*, represents the dialing of 9-1-1 and the dispatch of emergency personnel. In order for this link to be complete, the dispatcher must know the exact location of the victim.

The second link, *Early CPR*, can occur by dispatcher telephone instruction, by bystanders who know CPR, or by emergency personnel upon arrival on the scene.

The third link, *Early Defibrillation*, and the fourth, *Early ACLS*, usually are provided by emergency personnel. Each link in this chain depends upon the prompt and accurate determination of the location of the victim.

CHAIN OF SURVIVAL



Defibrillation Within 10 Minutes is an Achievable Goal in Urban Systems

According to the EMS Medical Director's Association of California (EMDAC), "Defibrillation within 10 minutes of collapse is an achievable goal in urban systems. Allowing for a two-minute interval from collapse to 9-1-1 activation, the time from receipt of call to defibrillation should not exceed eight minutes. A five-minute response interval will allow three minutes to locate and assess the patient, apply the defibrillator, allow the device to detect ventricular fibrillation and deliver the shock." (5-9)

Numerous Other Medical Emergencies Require Accuracy, Speed

There are numerous medical emergencies, in addition to SCA, where patients benefit from immediate activation of the EMS system and prompt response of emergency personnel. Examples, according to EMDAC, are "upper airway obstruction, acute asthma, pulmonary edema, and anaphylaxis."

For injured patients, the time interval between injury and arrival to the hospital or trauma center is important to survival. The concept of the "Golden Hour" was created to emphasize that every minute is important in locating and transporting the patient to the hospital for rapid evaluation and possible surgery.

For certain critical injuries, such as penetrating wounds to the chest, the time to treatment must be much shorter than one hour. (10)

Accurate Location Essential to Saving Lives

In order to achieve the short time intervals necessary to save lives, accurate location determination is essential. A less-accurate location determination system would have the following effects on an EMS system:

1. It will result in a delay in the dispatch of emergency responders.

With a wireline phone or a wireless phone with automatic location determination technology, the dispatcher will know quickly the exact location of the caller. With wireless 9-1-1 calls, for example, landmarks are often used, and it can be much quicker to know that there is only one "McDonalds" or "7-11" within the boundary of possible locations.

2. It will result in a delay in dispatchers being able to give medical care instructions.

9-1-1 dispatchers are trained to give instructions over the phone to callers. Many of these can make the difference between life and death. Examples are the Heimlich Maneuver for choking victims and CPR for those suffering sudden cardiac arrest. However, the dispatcher must verify the caller's location before starting the instructions so emergency responders can be sent to aid the victim. Delays in confirming location, which will certainly be longer with less accurate location determination technology, will further delay the instructions.

3. It will increase the time it takes for emergency responders to locate and treat the victim.

There is a substantial difference in the time it takes to locate a victim in an area defined by a 100 meter radius vs. a 250 meter radius. In New York City, if a rescuer traveling at a blended (stop and start) speed of 15 MPH were searching an area defined by a 100 meter radius (0.012 sq. miles/2 blocks/8 acres/0.3 linear street miles), a 100 meter inaccuracy would add less than a minute maximum to the search for the patient. But a 250 meter inaccuracy (0.076 sq. miles/49 acres/15 blocks) would add 9 minutes maximum to the search. This far exceeds any of the optimum time-to-treatment intervals discussed above. A less than 15 MPH blended speed of investigation would result in significantly worse results.

Comparing 300 meter (0.11 sq. miles/70 acres/22 blocks) accuracy with 750 meter (0.68 sq. miles/437 acres/133 blocks) accuracy is equally dramatic: 13 minutes maximum added time to locate the patient vs. one hour and 17 minutes.

4. It will extend the time from serious illness or injury to definitive treatment in the hospital.

Illnesses such as Sudden Cardiac Arrest can be treated by on-scene by emergency personnel. However, there are a large number of emergency conditions that cannot be effectively treated until the patient arrives in a hospital. Examples are stroke, heart attack, and most serious injuries. Extending the time it takes to locate these patients can easily threaten their lives.

5. It will unnecessarily occupy EMS resources and thereby delay responses to other emergency medical events.

EMS systems are designed to be prepared to respond not only to calls that *do* occur, but to calls that *might* occur. With a larger search area, the time sent locating the patient is time that emergency vehicle is not prepared to respond to another emergency call. Many EMS calls and subsequent deaths occur because the normally closest vehicle was not available.

In Summary

It is clear that there is a strong association between time to treatment and patient outcome in life-threatening emergency medical conditions. If a less accurate location determination technology is deployed, it will further slow EMS responses and patients will suffer.

Unfortunately, the majority of the public is not aware of this threat to their health and safety. It is our responsibility to evaluate these facts and make a decision that will best benefit us all.

The existing FCC rules set to begin in October 1 are a step in the right direction. It is troubling that AT&T has applied for a waiver, and is requesting to further weaken America's EMS safety net by using less accurate location determination technology. This request should be denied.

Sincerely,

/s/ John F. Brown, MD, MPA, FACEP

Medical Director
Emergency Medical Services Section
Department of Public Health
City and County of San Francisco

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